

BIOSOLIDS EXPERT PANEL

Environment Subcommittee

Meeting Minutes

Date: October 16, 2007

Location: VA Dept. of Fire Programs Office, 1005 Technology Park Drive, Glen Allen, VA

Panel Members Present:

- **Russ Baxter**, Virginia Department of Conservation and Recreation
- **Dr. Greg Evanylo**, Virginia Tech Department of Crop and Soil Environmental Sciences
- **James Golden**, Virginia Department of Environmental Quality
- **Dr. Robert Hale**, Virginia Institute of Marine Science
- **Scott P. Johnson**, Virginia Department of Agriculture and Consumer Services
- **Dr. Howard Kator**, Virginia Institute of Marine Science
- **Christopher Peot**, Blue Plains
- **Henry Staudinger**, Citizen representative
- **Dr. Jonathan Sleeman**, Virginia Department of Game and Inland Fisheries
- **Dr. Rima B. Franklin**, Virginia Commonwealth University Center for Environmental Studies
- **Dr. W. Lee Daniels**, Virginia Tech Department of Crop and Soil Environmental Sciences

Six members of the panel that indicated they wanted to participate in the environment work-group were unavailable to attend on this date:

- **Dr. Ralph O. Allen**, University of Virginia School of Medicine
- **Jerre Creighton**, Virginia Department of Forestry
- **Barry Dunkley**, City of Danville
- **Tom Fox**, Virginia Tech Department of Forestry
- **Karen Pallansch**, Alexandria Sanitation Authority
- **Dr. Alan Rubin**, consultant (principal Envirostrategies, LLC)

It is noted that Dr. Nancy Love, Virginia Tech Department of Civil and Environmental Engineering, will no longer be a member of the expert panel. Dr. Love has accepted a faculty position at a university outside Virginia.

Supporting staff present:

- **Jeff Corbin**, Office of the Secretary of Natural Resources
- **Robert Hicks**, Virginia Department of Health
- **Kevin Vaughan**, Virginia Department of Environmental Quality
- **Neil Zahradka**, Virginia Department of Environmental Quality

Introduction

Assistant Secretary of Natural Resources Jeff Corbin brought the meeting to order at 1:00 p.m. Mr. Corbin:

- briefly discussed logistics for this and future meetings of the environmental workgroup. Mr. Corbin stated that the full panel will meet in November, and one of the goals of this meeting is to determine what needs to go into the interim report.
- asked for suggestions from the group regarding choosing meeting dates, and suggested a standing date at a prescribed frequency. Greg Evanylo suggested using a website called “Doodle” to compare schedules. The group did not agree to a set schedule at this time.
- discussed the process by which information received from the public would be distributed to the panel members. He indicated he will try to forward as much as he could via email, but some attachments have been blocked by spam blockers on the recipients’ computers.
- noted that efforts were being made to make copies of DVD materials provided by C.W. Williams, and this material would be distributed to the full panel in November.
- noted that an audio file containing the public comment from the September 18, 2007 meeting would be posted on the expert panel website.

Neil Zahradka noted that an opportunity for public comment would be made at the end of today’s meeting. No one had signed up or stated a desire to speak at this point in the meeting. Mr. Zahradka stated that the opportunity will be made, should what the public hears during the course of the meeting cause them to desire to make comment.

Freedom of Information Act presentation

Ms. Cindy Berndt, DEQ Regulatory Coordinator, made a brief presentation regarding the requirements of the Freedom of Information Act (FOIA) as it relates to the work of this panel.

Ms. Berndt:

- all meetings are open to the public
 - all documents used or created by the panel are open to the public
 - the full panel is a public body, and 3 or more panel members working on panel business is also a public body, so any meetings of 3 or more would need to be public noticed and minutes taken
 - Neil Zahradka and Cindy Berndt are taking care of the public notice requirements for the full panel and workgroup meetings
 - emails are records, and any business of the panel discussed via email between 3 or more members is a “meeting”
 - Ms. Berndt’s recommendation was not to use “reply to all” if you are discussing panel business as this will constitute a meeting.
 - noted that she sent her FOIA presentation to all the panel members. It will also be available on the website.
 - The significance of the email issue is not whether or not that will be made public, but whether or not proper notice of the “meeting” was provided. If there is a need to conduct business between 3 or more members, DEQ can provide the notice
 - If a FOIA request is made, all emails will be considered public record and be made available.
- Ms. Berndt asked if the panel had any questions.

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Henry Staudinger clarified that a panelist can send information to the group, but the rest can't "reply to all" or this is "conducting business".

There were no other questions on FOIA.

Jeff Corbin stated that a request for individual contact information for the panel members had been received. This is in contrast to sending information via the "contact the panel" option on the website. Mr. Corbin asked all panelists to verify their info was correct so that he could make that publicly available.

Jeff Corbin began discussing the task of defining the workgroup's scope of work. He handed out letters to the panel from Henry Staudinger and Alan Rubin.

James Golden introduced Kevin Vaughan from DEQ, who was present to assist with facilitation of today's workgroup meeting.

Jeff Corbin asked Henry Staudinger to talk about his letter.

Henry Staudinger stated that he had talked with Alan Rubin about the need to prioritize to accomplish the panel's tasks. He noted that important issues included:

- health issues, specifically associated with aerosols
- furthering efforts to establish buffers that protect people
- pollution sensitive sites – the public does not feel adequately protected
- gave the example of Karst topography, that some feel the science is old with regard to transport.
- noted that some sites may need to be excluded due to runoff, water quality, or aerosols.
- health answers won't be found when makeup of the product is unknown

Kevin Vaughan asked if Mr. Staudinger's comments were specifically related to health.

Henry Staudinger replied that crossover is a key point, even though this group would be looking at environmental issues.

Jeff Corbin noted that if we move away from looking at the makeup of biosolids, we escape the directive of the resolution.

Henry Staudinger stated the generators have the most information on biosolids content, and that we can only count on what information is out there. We can ask EPA what information they have. With no money, we can only ask for what's already known.

Greg Evanylo recognized Alan Rubin and Henry Staudinger's prioritization, and asked if that would pre-empt the rest of the group.

Henry Staudinger replied "no", that it is provided only as a starting point, but hope that we can agree on the most important issues.

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Kevin Vaughan asked if it would be fair to note this committee was only charged with questions numbers 4 and 5 of the resolution. Kevin then read from the resolution.

Henry Staudinger replied that yes, it is in the scope of numbers 4 and 5. He stated you can't look at the items in a vacuum, and you must use a broad spectrum. He stated he was concerned about violations of the laws, and gave the example that the Milorganite incident was not a violation of the 503 regulation.

Jonathan Sleeman stated we need to look at the charge of the group, and that finding a solution to the problem was not our charge at this point.

Henry Staudinger stated that this is really phase one, information gathering.

Jeff Corbin asked for thoughts from the panel if they desired clarification about certain questions.

Robert Hale noted that regarding uncertainty, a complete list of components is not achievable. There will always be a gap. There is disagreement as to whether or not the gap is large enough to preclude making conclusions.

James Golden noted that the regulation will be evaluated later this year and next year. The resolution looks at higher level gaps than the technical advisory committee that will be formed for the regulatory change.

Jeff Corbin stated the workgroups need to report back to the full panel. If a request for information is to be made, the generators may not be obligated to provide all the information requested.

Howard Kator stated the legislation has specific environmental questions and we must address them before we adopt a different approach.

Henry Staudinger stated that had made specific recommendations regarding the questions in his letter.

Howard Kator asked if you can't quantify movement, then how do you establish a buffer? There is much missing information, and it does not allow for a full evaluation.

James Golden stated that this is a challenge from a regulatory standpoint, and noted that the DCR site specific plan addresses some issues.

Howard Kator gave an example of the research of regrowth of indicator bacteria. He noted we should identify relevant environmental issues.

Chris Peot noted that he is involved in Water Environment Research Foundation research, and recognized that Howard Kator is correct, there are many more unanswered questions. He noted that regrowth is not an issue at Blue Plains since they lime stabilize. He also referenced a link

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between regrowth and odors. He noted gaps in the research exist, but a lot of work has been done in the fate of compounds in land applied waste. He has papers he would like to provide to the panel. He also noted ongoing research at several locations that he would like to share. Howard Kator noted that a current bibliographical resource would be good.

Greg Evanylo suggested bringing in experts outside this panel, noting other people across the country have extensive knowledge in some of the subjects discussed. He stated he could point to narrower gaps in the research due to his knowledge of the research, and that conclusions were available that were much better than “nothing is known”. He noted the 503 regulations took a decade to assemble results, and this committee can’t be expected to refute that work in 15 months.

Robert Hale stated that no one is saying “We don’t know anything.”

Russ Baxter stated that we are here to sketch out a workplan, and that we need to document the questions being asked.

Kevin Vaughan noted that some questions are in the scope, some are out.

Russ Baxter asked about the current “playing field” of biosolids land application. He referenced Henry Staudinger’s comment of the frequency of compliance vs. non-compliance.

Robert Hale stressed a “bottom-up” scenario would be a good approach, where composition of the material is important. He asked about the status of the EPA national sludge survey.

Chris Peot noted that the newest national sludge survey is still not out. He noted Blue Plains is required to test for priority pollutants, but that they test for much more, and will check with his administrators to see if they can share additional information with the panel.

Robert Hale described differences in risk assessments, chemical by chemical or bioassay. He noted that we can’t use people, but some argue that that is what we’re doing. He suggested we find existing information on chemical composition and toxicological information.

Howard Kator asked What are the effects of accumulation on wildlife?

Robert Hale noted that in reference to chemical toxicology, people are accustomed to knowing, for example, what the LD50 of a particular chemical is, and would like to know if such info is available for biosolids. He noted the problems EPA has had evaluating biosolids as a complex mixture.

Greg Evanylo stated the 503 methodology set a good framework for risk assessment. The targets and effectors establish the matrix along with components of biosolids. A risk assessment can be done quantitatively. The combination question is valid, and some synergistic effect is possible.

Kevin Vaughan questioned how we capture the point of the risk assessment discussion.

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Greg Evanylo questioned Robert Hale as to whether he disagreed with the process used to define risk in the 503 regulation.

Robert Hale responded that the 503 process is a logical one, but there are new chemical components that may require a new starting point for evaluation.

Russ Baxter asked what is the most appropriate method of risk assessment as we try to evaluate risk?

Greg Evanylo stated that nutrients versus organics requires a different approach for a specific environmental issue.

Robert Hale stated it is not simple to assess risk. There are current water quality issues in Virginia that are linked to some source of endocrine disruptors. Are citizens sick from biosolids? He noted that ten years ago we took for granted these weren't issues. For example the safe levels for mercury have decreased over the years.

Greg Evanylo stated that he doesn't disagree, but there are some things we know enough about to rule them out. The endpoint receptors may be health related or environmental, for example fish in the water or earthworms in the soil. We know a lot about nutrients, and we know that the synergistic effect of endocrine disruptors with nutrients is negligible, but other interactions may be more questionable.

Robert Hale noted the biggest contribution of the committee could be to identify what we don't know enough about. He stated he has problems with EPA scientists who say it is 100% safe. We need to address the true uncertainty in a realistic manner. Some others state it is absolutely not safe, and he stated that while he is not one of those people, there needs to be some rational agreement on where the uncertainty lies.

Howard Kator noted that transport mechanisms are important. The panel should question which are the critical components transported out of biosolids. The panel should not try to address them all, but note which ones need more scrutiny (such as endotoxins).

James Golden noted that a holistic view of environmental issues in Virginia may help prioritize the items in question. For example, the pollutants that are significantly contributed by biosolids applications should get higher priority than other pollutants that may be contributed in much higher amounts by other activities.

Robert Hale noted that receptors are critically important, for instance, the level of exposure on earthworms that are immersed in the media.

James Golden noted that incorporating all the environmentally sensitive sites is critical, for example shellfish beds next to a farm where application is to be made.

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Russ Baxter noted that the environmental considerations should be made not only on the site, but near the site.

Jonathan Sleeman was concerned that the group was expanding the scope of work, looking at risk assessment versus risk identification. Risk identification would be less quantitative (yes/no/maybe/don't know).

Russ Baxter felt he couldn't answer the larger questions without addressing the more specific ones.

Jonathan Sleeman noted that without funds, we can only gather information.

Jeff Corbin noted that we can ask for funds if we feel we need them to answer the questions, and this is one of the reasons why a report was requested from the expert panel prior to the 2008 legislative session.

Jonathan Sleeman asked what questions need to be answered to answer the water quality questions.

Robert Hale noted that you must define what water quality is before you can answer the question.

Lee Daniels noted that we know quite a bit regarding some components, for example, zinc.

Robert Hale felt that a reasonable request from the group would be to suggest money for some agency to work on a specific problem.

Jeff Corbin noted that legislators want to know if this is safe for their constituents. He also suggested that it would be good for someone at EPA to tell the group how the risk assessment was done.

Chris Peot asked if we needed to go outside the panel for this summary.

Jeff Corbin noted that going outside the panel would reduce bias.

Lee Daniels noted that the documents on the risk assessment are available.

Greg Evanylo stressed the importance of someone verbalizing the risk assessment versus having to read the documents, and suggested Bob Bastian at EPA.

Kevin Vaughan asked if the group wanted to recommend to the full panel that a speaker be brought in to explain how the EPA risk assessment was done.

Howard Kator noted that he had a staff member at VIMS specializing in eco-toxicology that could speak on the subject of risk assessment.

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Greg Evanylo felt that the group needs someone involved in the 503 risk assessment, and would help focus more on what is more unknown (less known).

Kevin Vaughan suggested that regarding what was in-scope (items #4 and #5 on the resolution, a number of things to look at including transport of contaminants and the risk matrix) and out-of-scope for the group (a detailed evaluation of the regulations, public health issues).

Jeff Corbin noted that performing a detailed analysis of biosolids and evaluating the toxic potential of biosolids would also be in scope.

Lee Daniels suggested that we need to constrain questions to those associated with agricultural rates of biosolids application, and that compliance issues are out-of-scope.

Henry Staudinger countered that compliance is critical.

Lee Daniels clarified that we must assume the risk is associated with activities that are in compliance.

Robert Hale noted that the agricultural rate would not consider the effects of field storage.

Lee Daniels clarified that the risk must include what is normally associated with land application activities.

Jeff Corbin questioned the group regarding the “detailed analysis” question, specifically what would the panel recommend to answer this question, and whether or not there was any way to get at this that is achievable.

Robert Hale suggested that the group could establish a list to measure, but the target is moving with regards to what should be looked at.

James Golden added that fate and transport research was more important than content of the material.

Robert Hale suggested this is somewhat of a “chicken and egg” problem with regards to determining what to look for.

Chris Peot suggested that much more information is out there than most people realize. He offered to discover the status of EPA’s most recent survey. In addition, he noted that Blue Plains analyzes priority pollutants annually under the 503 requirements along with others. He stated they like to know as much about the content as they can.

James Golden noted that the data supplied by Blue Plains is only a subset of what is land applied in Virginia, and that other plants would likely have less data.

Chris Peot noted that approximately 50% of what is land applied in Virginia comes from Blue Plains.

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Greg Evanylo noted that Hampton Roads Sanitation District may also have additional data, along with Arlington and Alexandria.

Kevin Vaughan asked the group whether they felt they have adequately scoped the role of the subcommittee.

Jeff Corbin suggested that the procedure for requesting data from the biosolids generators needed to be defined.

Henry Staudinger felt that someone should draft a request for review by the panel.

Greg Evanylo suggested that Chris Peot knows what questions to ask and should draft the letter.

Henry Staudinger agreed.

Robert Hale noted that an important item to include would be any information on variability.

Chris Peot agreed and noted that he would try to get a draft to Jeff Corbin next week.

Kevin Vaughan suggested the group take a five minute break.

BREAK

The group re-convened at 3:00 PM

Kevin Vaughan noted the group had been looking at the scope for the first part of the meeting.

Neil Zahradka stated he will provide a draft of the scope to the subcommittee for review prior to the next committee meeting.

Kevin Vaughan asked what should be included in the interim report as recommendations from the subcommittee. He summarized what had been discussed so far, including the “in-scope” items, and plans to 1) develop a bibliography of existing articles and studies, 2) have someone present a summary of the 503 risk assessment (if this occurs at the next full meeting, it could be reported as delivered), 3) some presentation of presumptions and assumed scenarios (ag application as discussed by Lee Daniels)

Russ Baxter asked whether or not some analysis of complaints or non-compliance frequencies should be included in the goals.

Henry Staudinger noted the files will show that agronomic rates are not being followed. He noted that he will draft a letter outlining this.

Robert Hale asked if the panel could get information on investigations DEQ or VDH has conducted regarding discharges from biosolids related activities.

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Greg Evanylo asked how Henry Staudinger would compile his list of non-compliances, and stressed that the documentation should only include scenarios that were well-documented.

Henry Staudinger noted that he will draw his information from VDH files. He stressed again that one can't base an assumption on something being followed when it is not.

Robert Hicks noted that VDH has maintained an online database of documented incidents.

Chris Peot noted that the compliance questions may be moot if things are going to change with regard to the regulatory oversight.

Henry Staudinger noted that some of the same problems and issues may continue.

James Golden noted that he would suspect the VDH database is unlikely to show extensive environmental monitoring as a follow-up to issues.

Kevin Vaughan asked for other suggestions on items to include in the annual report.

Lee Daniels was concerned that putting together an adequate bibliography was too big a deliverable before November.

Kevin Vaughan noted that the deliverable is that the group plans to do it, not that it will be complete by November.

James Golden suggested that the meeting logistics for the group be included, that is how often the group intends to meet, etc.

Greg Evanylo noted that monthly meetings would make it difficult to attend every one, and that an alternate location such as Charlottesville would help.

Chris Peot noted that a task for the whole panel is to look at technology, and that the benefits of land application should be weighed in the discussion of alternative technology. Specifically, the concept of greenhouse gas sequestration should be included.

Jonathan Sleeman noted that his personal literature review on the effects on wildlife includes some positive, some neutral, some negative, and this same concept should be included regarding the positives and negatives for land application.

James Golden noted that a full evaluation of alternatives to land application would involve evaluations of the affect on landfilling activities, incineration activities, etc.

Greg Evanylo noted that the 503 risk assessment weighed in the risks (such as cancer) associated with alternatives such as incineration.

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Chris Peot was concerned that we should not come to the conclusion that because there is risk, the practice should be discontinued without considering the benefits. He offered to share his assessments of the technology.

Kevin Vaughan asked if there were any other items for consideration under agenda item #5, and none were raised from the group. He noted that if the group felt that monthly meetings were too frequent, bi-monthly meetings would give the opportunity for six meetings next year.

Greg Evanylo asked how many full panel meetings would be held.

Jeff Corbin stated that he expected to have at least two full panel meetings to discuss technology at one and address another subject at another. He suggested that meeting six times, workgroup plus panel, would be manageable.

Lee Daniels suggested that it is important to set the meeting dates and accept that not everyone will be able to make every meeting. He noted that key meetings will need to occur when reports are being generated.

Greg Evanylo noted that preparatory time before a meeting is important, and the group could decrease the frequency if better prepared. He also suggested that full panel meetings be held on the same day as subcommittee meetings.

Jeff Corbin stated he would prefer establishing a standing date for six meetings next year. He will coordinate the next meeting date of the full panel in November, starting with the two secretaries' schedules.

Kevin Vaughan discussed with the group several options for establishing the next meeting date of the environmental subcommittee in December. Jeff Corbin will finalize the date.

Public Comment

Kevin Vaughan opened the floor for public comment.

Charles Grof, from Concord, VA, offered the following comments:

- 1) He does not believe the generators will be honest in their responses to requests for what tests they have conducted on their biosolids. He noted that they are unlikely to report exceedances of the amounts of toxic materials that are dumped into their systems.
- 2) He questioned the concept of investing much money to treat wastewater, collect the solids, and then releasing it back into the environment.
- 3) He stated that fines are not a reliable means to gain compliance. He stated that Exxon has yet to pay the fine for the Valdez incident.

Chris Peot responded, noting that pretreatment measures are in place to curb illegal dumping in the inflow to the plant, and that it is in the best interest of Blue Plains to make sure these procedures are followed.

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Robert Hale noted that the panel will not rely solely on information collected from the generators to make their determination of the constituents in biosolids.

Kevin Vaughan adjourned the meeting at 3:45 p.m.